

## ABSTRACT

A method is provided for producing a metal-based carbon fiber composite material lightweight, high in the 5 thermal conductivity and also capable of controlling the direction of heat flow, while inhibiting metal carbide formation. The method for producing the metal-based carbon fiber composite material comprises the steps of: obtaining a metal fiber mixture by physically mixing 10 carbon fiber with metal powder; filling the metal fiber mixture into a jig, while the metal fiber mixture is aligned; and setting the jig in an air, vacuum or inert gas atmosphere and directly supplying pulse electric current to the metal fiber mixture, with applying a 15 pressure, to effect sintering by the heat generated therefrom. Here, the composite material contains 10 to 80 % by weight of carbon fiber based on a total weight of the composite material and is sintered at 70% or more of ideal density.